Analyzing Challenges and Opportunities of the Implementation of E-Government in Bangladesh

By Shahnewaz Liton & Md. Ahsan Habib

Mawlana Bhashani Science and Technology University, Bangladesh

Abstract - To make transparent and effective the government works, to increase government efficiency, accountability and to improve the service delivery and participating the public in all aspects of government activities e-Governance is obligatory. Bangladesh e-Government Index is very low as compared SAARC countries. Bangladesh has many challenges for the implementation of e-Government system in Bangladesh. Online Service Index, e-Participation Index, poor ICT infrastructure, insufficient human resources, lack of trust, Telecommunication Infrastructure Component and lack of awareness are the major constraints and challenges of e-Government implementation in Bangladesh. It may be provide significant opportunities to transform public administration into an instrument of sustainable development of Bangladesh. Egovernment also referred to as the use and application of ICT in public administration to streamline and integrate workflows and processes, to effectively manage data and information, enhance public service delivery, as well as expand communication channels for engagement and empowerment of people.

Keywords: e-government, e-participation, ICT infrastructure, e-governance model, trust.

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Keywords: e-government, e-participation, ICT infrastructure, e-governance model, trust.

I. INTRODUCTION

E-Government can be referred to as the use and application of information technologies in public administration to streamline and integrate workflows and processes, to effectively manage data and information, enhance public service delivery, as well as expand communication channels for engagement and empowerment of people. The opportunities offered by the digital development of recent years, whether through online services, big data, social media, mobile apps, or cloud computing, are expanding the way we look at e-government.

a) Types of E-Government

Four categories are perfect composed of E-Government.

Figure 1: E-Government Model

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Author b: Associate Professor, Department of ICT, Mawlana Bhashani Science and Technology University, Bangladesh. e-mail: tarequt@yahoo.com
i. Government to Citizen (G2C)

All the interaction between a Government and its citizens services under G2C. The primary goal of E-Government is to serve the citizen and facilitate citizen interaction with government by making public information more accessible through the use of websites, as well as reducing the time and cost to conduct a transaction. For example, to make certain transaction, such as certificate, paying governmental fees, and applying for benefits [3].

ii. Government to business (G2B)

Government efficiency and efficiency of process are enhanced by automate their interaction with businesses, including distribution of policies, memos, rules and regulations. Business services offered include obtaining current business information, downloading application forms, new regulations, lodging taxes, renewing licenses, registering businesses, obtaining permits, and many others [1]. The services offered through G2B transactions also play a significant role in business development, specifically the development of small and medium enterprises argued that G2B applications actively drive e-transaction initiatives such as e-procurement and the development of an electronic marketplace for government purchases; and carry out government procurement tenders through electronic means for exchange of information and goods [3].

iii. Government to Government (G2G)

This type refers to Electronic Commerce (EC) activities between government organizations, departments and agencies based on a super-government database. It renders information regarding compensation and benefit policies, training and learning opportunities, and civil rights laws in a readily accessible manner [4]. The vital aim of G2G development is to enhance and improve inter-government organizational processes by streamlining cooperation and coordination of Government body.

iv. Government to Employee (G2E)

Government employee large numbers of people. G2E refers to the relationship between government and its employees only. Some researchers consider it as an internal part of G2G sector and others deal with it as a separate sector of E-government [5]. G2E is a successful way to provide e-learning, bring employees together and to encourage knowledge sharing among them. It gives employees the possibility of accessing relevant information regarding compensation and benefit policies, training and learning opportunities, and allowing them access to manage their benefits online with an easy and fast communication model.

b) Bangladesh’s Position on E-Government Development Index (EGDI) in the comparison of SAARC Countries

E-Government Development Index (EGDI) presents world e-government rank of the countries. The EGDI is a composite measure of three important dimensions of e-government, namely: provision of online services, telecommunication connectivity and human capacity [6]. It is the capacity and willingness of countries to use e-government for ICT-led development. So, e-Government Index is the measurement of e-Government Implementation. In the world ranking Republic of Korea is at 1st position in 2014, Australia is in 2nd position and Singapore and France are in 3rd and 4th positions. Bangladesh is in 148th position in world ranking. In the comparison of SAARC regions Bangladesh is in 5th position in 2014 survey [6]. The following pie-chart displays the condition of Bangladesh e-Government Implementation. The index of e-Government of Bangladesh is 0.2757 and Rank is 5. So, it is very poor result in SAARC countries comparison.
System. The above pie-chart shows very poor infrastructure index 0.0941 and Rank 8 in SAARC region countries. It is very poor result of Bangladesh in ICT infrastructure development. Maldives and Sri Lanka has achieved first and second position in SAARC region countries.

![Comparison Chart of SAARC Region Infrastructure Index 2014](image)

**Figure 3**: Comparison Chart of SAARC Region Infrastructure Index 2014

d) **Bangladesh position on Human Capital Index**

The particular attention on significant changes in high quality education and learning, from early childhood development to post primary schooling, including not only formal schooling but also life skills and vocational education and training of e-Government implementation in the country. According to United Nations E-Government survey 2014 [6], Human Capital Index of Bangladesh is Medium. The index is 0.3866 and Bangladesh comes up in 5th position in SAARC region countries. Human Capital index is a elementary base of e-Government development and implementation.

![Comparison Chart of Human Capital Index of SAARC Region 2014](image)

**Figure 4**: Comparison Chart of Human Capital Index of SAARC Region 2014

e) **Bangladesh position on Online Service Index**

The digital divide is inextricably linked to social equity in today’s information world. It must connect people in rural and urban areas to the modern economy through quality telecommunications infrastructure.

The Online Service Index (OSI) is a most important part of E-Government implementation in the country. The position of Bangladesh in SAARC region is 4th. According to UN E-Government survey 2014 [6], Sri Lanka is successfully maintained 1st position with 0.6535 index and India holding 2nd position with 0.5433 Index in SAARC regions eight countries.

![Comparison Chart of Online Service Index of SAARC Region 2014](image)

**Figure 5**: Comparison Chart of Online Service Index of SAARC Region 2014

f) **Bangladesh position on e-Participation Index**

Three level model of E-participation are E-information, E-Consultation and E-decision making that moves a shift in view of people from passive receivers of services to co-creators of public value and contributors to community resilience. Otherwise the daunting challenges of sustainable development of economic growth those promotes full and productive employment for all and require the concerted action of all governance partners to produce desired outcomes.

- Availability of social networking features.
- Presence of e-consultation mechanisms and e-decision-making tools for the six sectors: education, health, finance, social welfare, labour information and environment.
- Existence of datasets on education, health, finance such as government spending, social welfare, labour information and environment.

In the context of Bangladesh, e-Government Participation Index also good in the comparison between SAARC region countries. Bangladesh has success to maintained good position in e-Government Participation Index.
Bangladesh is in 5th position in SAARC region of eight countries. Its e-Government world rank is 148th position and online service rank in 193 countries. Bangladesh is in 5th position in SAARC region of eight countries.

**Table 1:** Highest education degree attained

<table>
<thead>
<tr>
<th>Education Level</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor</td>
<td>394</td>
<td>39.4</td>
<td>39.4</td>
<td>39.4</td>
</tr>
<tr>
<td>MBA</td>
<td>39</td>
<td>3.9</td>
<td>3.9</td>
<td>43.3</td>
</tr>
<tr>
<td>Masters</td>
<td>442</td>
<td>44.2</td>
<td>44.2</td>
<td>87.5</td>
</tr>
<tr>
<td>Ph D</td>
<td>4</td>
<td>.4</td>
<td>.4</td>
<td>87.9</td>
</tr>
<tr>
<td>Others</td>
<td>121</td>
<td>12.1</td>
<td>12.1</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>1000</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

**Data Source:** Preparation of e-Government in Bangladesh 2012

III. **Challenges and Opportunities for Implementation of E-Government in Bangladesh**

Bangladesh is a developing country. So it is an opportunity to implementation of E-Government in Bangladesh. But it is also difficult to create an enabling environment for e-participation. Digital media literacy can facilitate e-participation by increasing the capacity of people. However, it is not only social media and websites that matter for successful e-participation. Traditional communications means and tools—such as radio, television, seminars, workshops, schools, universities, talk shows, face-to-face debates—combined with digital means, can help make public engagement more productive.

**a) Poor ICT Infrastructure**

ICT infrastructure is recognized to be one of the main challenges for E-Government implementation. Mentioned table display the reflection of poor ICT infrastructure in Bangladesh. The size of population is 100.0.
15.74 million and only 9.03 lac telephone lines are distributing within the country. According to population size only telephone 0.58%, fixed wired internet subscriptions 0.3%, Mobile internet subscriptions 2.2% and mobile 75.2% people are using [7].

Table 4: Performance Data in Bangladesh

<table>
<thead>
<tr>
<th>Telephone Service</th>
<th>30-Jun-12</th>
<th>30-Jun-13</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telephone Capacity</td>
<td>14.28 lac</td>
<td>14.72 lac</td>
</tr>
<tr>
<td>Telephone Connection</td>
<td>9.36 lac</td>
<td>9.03 lac</td>
</tr>
<tr>
<td>Telephone Capacity Used</td>
<td>65.51%</td>
<td>61.37%</td>
</tr>
</tbody>
</table>

Intelligent Network (IN) based Service

<table>
<thead>
<tr>
<th></th>
<th>Capacity</th>
<th>Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Paid Calling Card</td>
<td>-</td>
<td>2,25,000</td>
</tr>
<tr>
<td>Pre-Paid Telephony</td>
<td>10,000</td>
<td>67</td>
</tr>
<tr>
<td>Toll-Free Phone Service</td>
<td>500</td>
<td>7</td>
</tr>
</tbody>
</table>

Domain (.bd) registered

<table>
<thead>
<tr>
<th></th>
<th>Till 30 Jun 2013</th>
<th>11533</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bandwidth (30 June 2013)</td>
<td>Media</td>
<td>Voice</td>
</tr>
<tr>
<td></td>
<td>Satellite</td>
<td>194Mbps</td>
</tr>
<tr>
<td></td>
<td>Submarine Cable</td>
<td>2.79Gbps</td>
</tr>
</tbody>
</table>

Internet Service

<table>
<thead>
<tr>
<th></th>
<th>Dial-up</th>
<th>Bcube(ADSL Broadband)</th>
<th>Gateway &amp; Interconnection</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All telephone customers can avail this service on 'No use-No pay' basis.</td>
<td>Capacity</td>
<td>47,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Connection</td>
<td>13,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Districts covered</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td></td>
<td>30-Jun-12</td>
<td>30-Jun-13</td>
</tr>
<tr>
<td>IGW</td>
<td>5</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>IIG</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>ICX</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

Foreign Call Traffic

<table>
<thead>
<tr>
<th></th>
<th>30-Jun-13</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incoming</td>
<td>2390 Million Minutes</td>
</tr>
<tr>
<td>Outgoing</td>
<td>66 Million Minutes</td>
</tr>
</tbody>
</table>


b) Access National ID Database

Government needs permit to access national ID database all government agencies and private sector such as Bank. It is also prevent financial crime. Bangladesh government have to design a central database to government officer can identify any person for any special reason.

c) Financial Transaction with Online Core Banking Software

Bangladesh Bank should take necessary steps to design a common Online Core Banking Software for Bangladesh of online funds transfer from one bank to any other banks within and outside of Bangladesh to smoothly perform all kinds of banking transaction. Because, Bank to Bank online funds transfer process also play the vital rules in people daily life which is very important to implement the e-Government and involved the people in e-Governance [8].

d) ICT skills. Language and content barriers

Educational disparity is another contributory factor of the implementing E-Government. A strong correlation exists between the education and literacy on the one hand and the ability to use technology on the other. Education is the most important determinant of the intensity of Internet use. This allows advanced countries with a solid human resource base to remain far ahead of others. The ability to understand, use and deploy the Internet content determines the extent to which one can participate in the economy and the society.

e) Navigating e-health and m-health

The great value of e-health services and information delivered or enhanced through the Internet and related technologies that it enables remote consultations and healthcare service delivery and better dissemination of vital health information to patients. E-health may become an area for the emergence of key killer applications that utilize truly high-speed broadband networks; hence it is important for development of e-government services on the whole. M-health stands for the provision of health-related services using mobile communication technology. In particular, m-health information is actively taken up by mobile phone users.

f) E-employment service usage

E-government can help deliver employment services to potentially extend its reach to job seekers and other citizens, including the rural poor. As far as e-employment service types are concerned, information services are one of the most important. According to the latest study on youth employment in Bangladesh lack of skills and information on jobs available are actually perceived as bigger challenges than the lack of available jobs.
g) Public encouragement about portal
The most of the government officials and public does not know about the e-Citizens Service application portal. Very few percent of the government officials and general people of the country are aware about the portal. Only few portions of the people are using the e-governance portal.

h) Low per Capita Income
The per capita income of Bangladesh is very low in the SAARC region country. The rank of Bangladesh is 6 out of eight countries. The per capita income of Bangladesh is US$840.00. This is a major challenge of implementation of E-Government.

Table 5: Per Capita Income

<table>
<thead>
<tr>
<th>Country</th>
<th>Per Capita Income 2014($)</th>
<th>SAARC Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maldives</td>
<td>5750</td>
<td>1</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>2920</td>
<td>2</td>
</tr>
<tr>
<td>Bhutan</td>
<td>2420</td>
<td>3</td>
</tr>
<tr>
<td>India</td>
<td>1580</td>
<td>4</td>
</tr>
<tr>
<td>Pakistan</td>
<td>1260</td>
<td>5</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>840</td>
<td>6</td>
</tr>
<tr>
<td>Nepal</td>
<td>700</td>
<td>7</td>
</tr>
<tr>
<td>Afghanistan</td>
<td>680</td>
<td>8</td>
</tr>
</tbody>
</table>

i) Political Issues
Political factors are very effective in government functioning, which may obstacle implementation of E-Government if interest of a group is hampered. Political stability is important for successful implementation of E-Government [9]. Bangladesh is facing lot of problems in the development of Nation. Several political parties in Bangladesh but they have no unity and interrogation to each other’s.

j) Security and privacy concerns
The increasing use of mobile channels has resulted in the increasing vulnerability of sensitive information. While service providers have to exercise caution in addressing this concern, there is also a need to educate citizens on how they can reduce this risk, as users may be the primary cause for certain threats. Citizens should selecting a good password following best practice and accept two-factor authentication, should that be offered. Governments must conduct due diligence in ensuring citizen data is protected such as through secured system access, user identification, data protection and other critical security measures.

IV. Innovative and Collaborative Framework and some Hypotheses
Citizen Engagement, Empowerment for E-Government Implementation

The E-Government development and implementation challenges require strategic plan and collaborative framework in the country. This innovative and collaborative framework can play an important role in promoting integrated approaches to sustainable development, all agencies across portfolio boundaries to jointly achieve integrated responses to the issues of policy development, program management and service delivery.

Find out present development challenges
↓
Citizen’s expectation and demand
↓
Environmental Scanning
↓
Assessment of meaningful participation in collaborative mechanisms
↓
Round Table Discussions
↓
Interview of Donors, Govt. officials, Private entities etc.
↓
Survey of govt. ministries & Donors

a) Find out present development challenges
In the first step find out present development challenges, such as poverty eradication, disaster prevention and crisis management. Collaboration is therefore required effectively address that go beyond the capability of level of government.

b) Citizen’s expectation and demand
An increase in citizen’s expectations and demand for effective, equitable and citizen centric services demands a shift from inward, disjointed and process oriented organizational structures to highly collaborative frameworks for seamless delivery of services and enhanced development impact.

Environmental Scanning: Technical architecture and infrastructure has been develop, which can help to develop and implement the E-Government in the country.

Assessment of meaningful participation in collaborative: meaningful participation in public affairs and decision-making processes call for innovative government and collaborative mechanisms that allow people to actively take part in decisions that affect their lives.

c) Round table discussions
In this step discuss national and international issues, including globalization, maintaining security, more open, transparent, accountable and effective public government.

d) Interview of Donors, Govt.officials, Private entities
In this step interview of donors, Government officials, private entities become entrepreneurial in generating revenues and promoting partnerships.
V. Hypotheses in Bangladesh Context

The government of Bangladesh has put effort into developing their online portal and their telecommunication infrastructure. We are using questionnaire approach technique to elaborate information from citizens. We try to know the citizens think about E-Government [10]. That’s why we distributed 500 questionnaires to government sector and private sector and students, face to face [11]. We asked a few open ended questions related to the use of government service and what E-Government services should provide? Including their opinions about quality of services, confidence in service, and security of information.

a) First hypothesis

The E-participation of government sector employees and public to deal with E-Government in terms of age and qualification.

<table>
<thead>
<tr>
<th>Table 6 : Age Factor</th>
<th>Table 7 : Bachelor Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Sector</td>
</tr>
<tr>
<td>31-45</td>
<td>Government</td>
</tr>
<tr>
<td>18-30</td>
<td>Private</td>
</tr>
<tr>
<td>31-45</td>
<td>Private</td>
</tr>
<tr>
<td>18-30</td>
<td>Student</td>
</tr>
</tbody>
</table>

This survey results are very encouraged and empowerment for the application of E-Government in terms of age and qualification. 75% of government sector employee’s age limited to the ages between 31-45, who are also holders of Bachelor’s with 69% see Table 6 and Table 7. Government sector is large sector. 72% of private sector age limited to the ages between 18-45, who are also holder of Bachelor’s with 55%, while the rest of them hold diploma or high school. 70% students significantly use E-Government.

b) Second hypothesis

Citizens express their desire services through E-Government with not feeling full trust. So many people does not trust to paying electricity bill, applying driving license, passport form fill up, applying for benefit through E-Government where it completes the traditional services. 30% of them doubt the trust of paying for services. 25% of them claim the lack of security of information. So policy makers IT providers to develop systems that citizen’s expectation and demand for trustworthy, secure and more confidential.

c) Third hypothesis

Citizens know about the E-Government and they want to deal with it. Statistics show that 67% of citizens in Bangladesh do not know about the e-Government services. The policy maker must develop awareness programs to achieve all citizens. 33% of Bangladesh expressed their strong interest in using e-Government services for both information and transactions. Awareness is a challenge that facing the e-Government. Fourth Hypotheses: Employees and citizens using the Internet at work to complete their transactions.

The Government sector and private sector does not using the internet at work to complete their transactions without a little bit banking sectors. But offline computing uses ratio government and private sector are 30% and 40%.

VI. Conclusion

Increase the level of awareness for all citizens about E-government implementation. To meet the vision and objectives the challenges in the implementation of E-Government should be overcome. An innovative and collaborative framework is developed for the effective implementation of e-Government in Bangladesh. For the effective delivery and fulfillments of challenges, the conceptual framework play major role.

REFERENCES Références Referencias


